

**TITLE:       MULTIPURPOSE METAL FILL**

**ABSTRACT OF THE INVENTION**

The present invention adds a plurality of substrate barriers for reducing substrate noise. The barriers, consisting of a plurality of equally sized n-well regions formed within the p-substrate, are formed between the analog and digital portions and on at least one side of sensitive analog circuits. A MOSFET transistor configured as a capacitor is formed within each of the n-well regions and is coupled between supply and circuit common to filter supply noise. A metal layer capacitor is formed above each MOSFET capacitor and is coupled between supply and circuit common. The present inventive circuit adds metallization to satisfy metal percentage requirements and to improve noise filtering. Each barrier region includes a plurality of coupled (shorted) n-wells with MOSFET transistors configured as capacitors. Additionally, in the described embodiment, the metallization layer is formed to create metal capacitors on top layers of the n-well regions to create additional noise filtering between supply and ground.